

Snowy Plover Monitoring at Point Reyes National Seashore

The Question: How are the numbers of Western Snowy Plovers at Point Reyes National Seashore changing over time? What management techniques best increase their numbers?

Since 1995, Point Reyes National Seashore (PORE) and PRBO Conservation Science (PRBO) have been implementing a recovery project for the breeding Western Snowy Plover (*Charadrius alexandrinus nivosus*) population within the Seashore. The Snowy Plover is a small shorebird that became a federally threatened species in 1993. Current estimates project that there are roughly 1,800 Western Snowy Plovers along the Pacific Coast from Washington to Baja. Their diminishing numbers are largely due to habitat loss and degradation from the introduction of nonnative plants.

Because Snowy Plovers are sensitive to changes in habitat, they might be considered an indicator of the health of the shore ecosystem. Western Snowy Plovers will reside, nest and rear young only in habitats with certain characteristics. Snowy Plovers nest on flat, unstable, open areas—preferably dune-backed beaches and spits. The beaches and spits should be sparsely covered with vegetation to allow chicks protected access to the shore (they are harder to see in open dune fields) and to allow plovers to see approaching predators. A 50 acre habitat with these requirements has been recently restored by removing the invasive European beachgrass (*Ammophila arenaria*) at Abbotts Lagoon within PORE.

The Project: Annually monitor the numbers of adults, nests, eggs laid, eggs hatched, chicks and fledglings during the breeding season. Use adaptive management techniques to determine which ones best help Snowy Plovers successfully reproduce.

PRBO has been collaborating with PORE to monitor Snowy Plovers on Point Reyes beaches intensively for 16 years, including 1977, 1986 to 1989, and 1995 to the present. Each year Snowy Plovers are monitored during the breeding season—March through September. Every week, PRBO biologists systematically search Point Reyes Beach and Limantour Spit for nests and watch potential nesting adults from concealed positions. Nests are checked frequently to determine the exact hatching date and the chicks are monitored for another 28 days, at which time they are considered fledged.

Over these years, PRBO and PORE have experimented with a variety of management measures that would help the plovers reproduce successfully, including erecting exclosures (protective fencing) around nests, creating seasonal closures around nesting habitat and removing invasive plants. The exclosures, similar to those used for the Piping Plover (*Charadrius melodus*) on the east coast, are made of 10-foot by 10-foot square, 5 foot tall fencing with netting on top. The exclosures allow plovers to enter and leave while keeping out predators. To reduce human disturbance of plovers, the park uses educational signs and brochures to teach the public about the vulnerability of nesting Snowy Plovers and to alert visitors to seasonal closures and pet restrictions in plover habitat. On weekends, when recreation is most intense, park employees and several volunteer docents are present on beaches and at trailheads to educate visitors.



Callie Bowditch



Emily Dangremond

Hatched chicks are more likely to survive if adults can nest in appropriate habitat—flat open beaches backed by dunes. The recently restored dune area at Abbotts Lagoon provides high quality nesting habitat.



Jessica Taylor

Fence enclosures protect the nests inside from humans, dogs and predators.

Preliminary Results: *The 2006 plover nesting season was successful—74% of laid eggs hatched and 45% of hatched chicks fledged. Also, plovers are nesting in the restored coastal dunes at Abbotts Lagoon.*

The plover nesting season in 2006 was the most successful since 1995. An estimated 23 of 24 nests were protected with enclosures and 51 eggs hatched out of 69 laid (74% hatching success). Of the 51 chicks that hatched, 23 fledged, yielding a 45% fledging rate. More than one chick fledged per male, which indicates that the Snowy Plover population was potentially self-sustaining. An estimated 30–32 breeding birds nested this year.

The success of the nesting season was due to the effectiveness of the enclosures, the opening of new habitat for Snowy Plovers and the education of the public by docents. Since March 2004, plovers have begun to nest in the restored dune area at Abbotts Lagoon. This is the first time plovers have used these back dunes since research began in 1972. Normally, plover nesting activity has been restricted to a narrow strip of sand between the sea wall formed by beachgrass and the high tide line. Plovers are using the restored area for chick rearing as well. Male plovers have been seen moving chicks to this area from as far as a mile and a half away.

Since 2001, the Snowy Plover recovery program has included a significant volunteer education effort with funding support from Point Reyes National Seashore Association. These "Snowy Plover Docents" frequent Seashore beaches on weekends and holidays, providing Snowy Plover education to nearly 2,000 visitors annually. Far fewer chicks are being lost on weekends and holidays compared to weekdays, suggesting that docent presence and education efforts are playing a critical role in sustaining Snowy Plover breeding populations on Point Reyes beaches.

The park intends to continue the protection, restoration and education programs in the near future until the population is sustained at the US Fish and Wildlife Service recovery plan target number of 64 breeding birds for Point Reyes beaches and until one chick is produced per male during the breeding season.

Additional Resources:

U.S. Fish and Wildlife Service Draft Recovery Plan for the Western Snowy Plover
http://ecos.fws.gov/docs/recovery_plans/2001/010501.pdf

For More Information:

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Claude Forter

On weekends during the breeding season, volunteer docents educate the public about snowy plovers. Fewer chicks appear to be lost on the days that docents volunteer.